

Amendments to the Abstract:

Please substitute the following version of the Abstract, with changes shown by strikethrough (for deletions) or underlining (for added matter).

ABSTRACT OF THE DISCLOSURE

~~The plasma spraying method is a coating method in which a material to be coated is sprayed onto a surface of a metallic substrate (2) in the form of a powder beam. The coating material is injected at a low process pressure, which is lower than 10,000 Pa, into a plasma defocusing the powder beam and is there partly or fully melted. In this connection, a plasma with sufficiently high specific enthalpy is produced so that a substantial portion, amounting to at least 5% by weight, of the coating material changes into the vapour phase and an anisotropically structured coating (1) is produced on the substrate. An anisotropic structured layer of the coating material is deposited on the substrate. In this coating, elongate particles (10), which form an anisotropic micro-structure, are aligned standing largely perpendicular to the substrate surface and low-material transitional zones (11, 12) bound the particles from one another.~~ A method of forming a coating on a substrate using a low pressure plasma spray, using a coating material in the form of a powder beam for spraying onto a surface of a substrate. The method includes operating the plasma spray to produce a plasma stream which delivers the coating material to the substrate, wherein the coating material in the powder beam is at least partially melted, the operating including introducing a plasma gas into a plasma gun to establish plasma gas operating conditions; generating a plasma intensity sufficiently high enough to vaporize approximately 5-30% of the powder coating material; maintaining a powder conveying rate sufficiently low enough, and maintaining a process pressure sufficiently low enough, and maintaining a gas flow rate sufficiently low enough to form an anisotropically structured coating having anisotropic columnar microstructures aligned perpendicular to the substrate surface having transitional zones in which material-deficient zones bound the columnar particles at their sides.

(Fig. 1)